ENVIRONMENTAL COOPERATION

GLOBE Program

Agreement Between the
UNITED STATES OF AMERICA
and NEPAL

Signed at Kathmandu March 3, 2000

with

Appendices

NOTE BY THE DEPARTMENT OF STATE

Pursuant to Public Law 89—497, approved July 8, 1966 (80 Stat. 271; 1 U.S.C. 113)—

". . .the Treaties and Other International Acts Series issued under the authority of the Secretary of State shall be competent evidence . . . of the treaties, international agreements other than treaties, and proclamations by the President of such treaties and international agreements other than treaties, as the case may be, therein contained, in all the courts of law and equity and of maritime jurisdiction, and in all the tribunals and public offices of the United States, and of the several States, without any further proof or authentication thereof."

NEPAL

Environmental Cooperation: GLOBE Program

Agreement signed at Kathmandu March 3, 2000;
Entered into force March 3, 2000.
With appendices.

Agreement between
the National Oceanic and Atmospheric Administration
of the United States of America and
the Ministry of Education of His Majesty's Government of Nepal
for Cooperation in
the GLOBE Program

PREAMBLE

The U.S. National Oceanic and Atmospheric Administration, acting on behalf of itself and other U.S. Government agencies participating in the GLOBE Program (hereinafter, the U.S. side), and the Ministry of Education of His Majesty's Government of Nepal (hereinafter, the Nepalese side),

Intending to increase the awareness of students throughout the world about the global environment,

Seeking to contribute to increased scientific understanding of the Earth, and

Desiring to support improved student achievement in science and mathematics,

Have agreed to cooperate in the Global Learning and Observations to Benefit the Environment (GLOBE) Program as follows:

ARTICLE 1 - THE GLOBE PROGRAM

The GLOBE Program is an international environmental science and education program that brings students, teachers, and scientists together to study the global environment. GLOBE has created an international network of students at primary, middle and secondary school levels studying environmental issues, making environmental measurements, and sharing useful environmental data with one another and the international science community.

ARTICLE 2 - RESPECTIVE RESPONSIBILITIES

A. The U.S. side will:

1. Identify U.S. schools that will participate in the GLOBE Program (details regarding GLOBE schools in Appendix A);
2. Select, in consultation with international scientists and educators, the GLOBE environmental measurements and types of measurement equipment (described in Appendix B);
3. Select Principal Investigator Teams for the GLOBE environmental measurements, and support the U.S. members of the Teams;
4. Develop, in consultation with international scientists and educators, GLOBE educational materials;
5. Translate GLOBE instructional materials related to measurement procedures and data reporting protocols into the six United Nations languages, and provide a copy of these plus all broader GLOBE educational materials to the Nepalese side for further reproduction as necessary;

6. Conduct regional training sessions for GLOBE Country Coordinators and GLOBE teachers who will serve as trainers for additional GLOBE teachers in Nepal;
7. Design, develop, operate, and maintain GLOBE data processing capabilities and other necessary technology and equipment;
8. Provide GLOBE software, as necessary, for use on Nepalese GLOBE school computers (To the extent possible, textual material appearing on computer screens will be accessible in the student's choice among the six United Nations languages.);
9. Accept environmental data reported from GLOBE schools around the world, and develop and provide resultant global environmental images to the Nepalese side; and
10. Evaluate the overall GLOBE Program periodically, in consultation with international GLOBE Country Coordinators, and modify the overall program as appropriate.

B. The Nepalese side will:

1. Identify Nepalese schools that will participate in the GLOBE Program (details regarding GLOBE schools in Appendix A) and provide an updated list of Nepalese GLOBE schools to the U.S. side at the beginning of each school year;
2. Ensure that Nepalese GLOBE schools conduct the fundamental activities of GLOBE schools detailed in Appendix A (take GLOBE environmental measurements, report data, and receive and use resultant global environmental images, using GLOBE educational materials under the guidance of teachers trained to conduct the GLOBE Program);
3. Name a Nepalese Government Point of Contact responsible for policy-level communications with the Director of the GLOBE Program;
4. Name a Country Coordinator responsible for day-to-day management, oversight, and facilitation of the GLOBE Program in Nepal;
5. Ensure that the Country Coordinator and some GLOBE teachers attend GLOBE regional training and in turn provide GLOBE training to at least one teacher in each Nepalese GLOBE school;
6. Ensure that GLOBE instructional materials related to measurement procedures and data reporting protocols are utilized in Nepalese GLOBE schools, and that broader GLOBE educational materials are appropriately translated, adapted, reproduced, and distributed to all Nepalese GLOBE schools;
7. Ensure that the measurement equipment used by GLOBE schools to take GLOBE environmental measurements meets GLOBE specifications (described in Appendix B);
8. Ensure that teachers and students at Nepalese GLOBE schools calibrate GLOBE measurement equipment according to procedures provided in GLOBE instructional materials;
9. Ensure that Nepalese GLOBE schools have the necessary computer and communications systems to allow Internet/World Wide Web access in order to report GLOBE environmental measurements and to receive and use GLOBE environmental images; if such computer and communications systems are not available in Nepalese schools, make agreed alternative arrangements for such reporting and receipt (At a minimum, the Nepalese Country Coordinator will need access to the Internet so that all measurement data from Nepalese GLOBE schools will be reported via Internet.); and
10. Evaluate GLOBE operations in Nepal periodically and assist the U.S. side in conducting periodic evaluation of the overall GLOBE Program.

ARTICLE 3 - FINANCIAL ARRANGEMENTS

Each side will bear the costs of fulfilling its respective responsibilities under this agreement. Obligations of each side pursuant to this agreement are subject to its respective funding procedures and the availability of appropriated funds, personnel, and other resources. The conduct of activities under this agreement will be consistent with the relevant laws and regulations of the United States and Nepal.

ARTICLE 4 - EXCHANGE OF DATA AND GOODS

GLOBE environmental measurement data, global environmental images, software, and educational materials will be available worldwide without restriction as to their use or redistribution.

ARTICLE 5 - RELEASE OF INFORMATION ABOUT THE GLOBE PROGRAM

Each side may release information on the GLOBE Program as it may deem appropriate without prior consultation with the other.

ARTICLE 6 - CUSTOMS AND IMMIGRATION

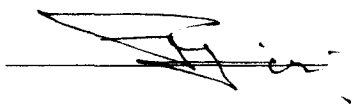
Each side will use its best efforts to facilitate the movement of persons and goods into and out of its territory and to accord entry to such goods into U.S. and Nepalese territory free of customs duties and other similar charges, as is necessary to implement this agreement, to the extent permitted by the laws and regulations of the United States and Nepal.

ARTICLE 7 - DURATION

This agreement will enter into force upon signature of the two sides and will remain in force for five years. It will be automatically extended for further five-year periods, unless either side decides to terminate it and so notifies the other side with three months written notice. This agreement may be terminated at any time by either side upon three months prior written notice to the other side. This agreement may be amended by written agreement of the two sides.

Done at Kathmandu, Nepal, on the third day of March, 2000, in duplicate.

For the Ministry of Education:



For the National Oceanic and Atmospheric Administration:

APPENDIX A
GLOBE Schools

Each partner country is responsible for identifying its participating schools. Schools should be selected so as to satisfy the objectives of the GLOBE Program. In particular, countries should emphasize the selection of schools that will maximize the number and geographic distribution of students worldwide participating in the program. Also, countries should consider involving schools in locations that will yield measurement data that is important to the international science community.

Students at all GLOBE schools throughout the world conduct the following fundamental activities: they make environmental measurements at or near their schools; report their data to a GLOBE data processing site; receive vivid graphical global environmental images created from their data and the data from other GLOBE schools around the world; and study the environment by relating their observations and the resulting images to broader environmental topics. All of these activities are conducted under the guidance of specially trained teachers (GLOBE-trained teachers).

GLOBE educational materials are used in GLOBE schools under the guidance of GLOBE-trained teachers. These materials contain instructional materials detailing procedures for taking environmental measurements and protocols for reporting data; they also explain the significance of the measurements, guide the use of the global environmental images, and integrate the measurement aspects of the program into a broader study of the environment.

APPENDIX B
GLOBE Environmental Measurements and Equipment

GLOBE environmental measurements contribute in a significant way to the scientific understanding of the dynamics of the global environment. The set of GLOBE measurements reflects the desire of GLOBE Program management, scientists, and educators to respond to the needs of the education community as well as to provide scientifically useful environmental data. All GLOBE Schools are strongly encouraged to participate in the full range of GLOBE Science measurements. Instrument costs vary, depending on the optional methodologies selected and on equipment already available. GLOBE instruments need to meet functional and performance specifications; they do not need to be purchased from specific vendors.

ATMOSPHERE/CLIMATE STUDIES

Measurements	**Equipment Needed**
Cloud Cover/Type	Cloud Chart
Air Temperature - Max/Min. & Current Temp. (also used for Water Temperature, Salinity, and Soil Particle Size measurements)	Maximum/Min. Thermometer, Calibration Thermometer, Instrument Shelter
Precipitation, Liquid, Solid	Rain gauge, Snow board, Snow depth pole
Precipitation pH, Water pH, Soil pH	pH indicator paper, pH pen, pH 7 buffer, pH meter, pH 4 and pH 10 buffers

HYDROLOGY STUDIES

Measurements	**Equipment Needed**
Dissolved Oxygen	Dissolved oxygen kit
Alkalinity	Water alkalinity kit
Dissolved Oxygen, Alkalinity, Salinity, Titration Nitrate	Safety Equipment - Plastic gloves and goggles
Electrical Conductivity - Fresh water sites only	Total dissolved solids (conductivity) tester, Calibration solution
Salinity -- Titration Method	Salinity kit, Hydrometer, 500 mL clear plastic graduated cylinder
Nitrate	Water Nitrate kit
Transparency -- Deep water site only	Secchi Disk, Rope, Turbidity tube

LAND COVER / BIOLOGY STUDIES

Measurements	Equipment Needed
Latitude, longitude and elevation	Global Positioning System receiver
Land Cover Mapping	Remote sensing image data, MultiSpec software
Species Identification	Dichotomous keys
Site Layout, Tree Circumference, Tree Height	50 m tape measure
Tree Height, Slope	Clinometer
Canopy Cover	Densiometer
Grass Biomass	Plant clippings drying oven

SOIL STUDIES

Measurements	Equipment Needed
Particle Size	Hydrometer, 500 mL clear plastic graduated cylinder
Profile, Bulk Density, Soil Moisture	Dutch auger, Shovel
Soil Profile, Land: Site Layout	Camera
Depth, Soil Moisture	Meter stick
Soil Color	Color chart
Free Carbonates	Distilled white vinegar, Acid squirt bottle
Bulk Density, Particle Size	#10 sieve (2 mm mesh)
Moisture, Bulk Density	Soil drying oven
Gravemetric Soil Moisture, Soil Bulk Density	Balance, Soil cans (15), Other soil containers
Particle Size	Dispersing solution
Soil pH, Bulk Density	100 mL graduated cylinder
Soil Fertility	Soil NPK kit
Infiltration	Dual Ring Infiltrometer
Temperature	Soil Thermometer

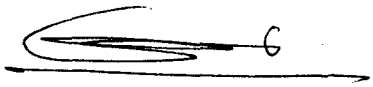
APPENDIX C
GLOBE Computer and Communications Systems

In order to derive maximum benefit from the GLOBE Program, all schools are encouraged to use the Internet, along with classroom computers. The Internet/World Wide Web multi-media information-access capability has been selected to support the required GLOBE school activities of data entry, data analysis, and use of global environmental images.

The diversity of technology accessible by schools worldwide may require, in some cases, that environmental measurements be reported via e-mail or in hardcopy and that a variety of media, including e-mail and hardcopy, be used to distribute global environmental images. All schools that want to participate in the program will be accommodated.

Technology associated with the GLOBE Program will continually evolve to higher levels and participants will be encouraged to upgrade over time.

In witness hereof, on the third day of March, 2000:



Secretary of the Ministry of
Population and Environment of His
Majesty's Government of Nepal